

comprises a P4H gene that complements an endogenous P4H gene mutation, and

(b) observing the effect of the test compound on the prolyl 4-hydroxylase activity of the progeny of the test nematode, P4H-gene modified nematode or the wild-type nematode, wherein a dpy or embryonic lethal phenotype indicates prolyl-4-hydroxylase inhibition.

2. The method of claim 1, wherein the test compound is a chemical.

3. (Amended) The method of claim 1, wherein the test compound is a protein or peptide.

4. The method of claim 1, wherein the introduction of the test compound involves placing the nematode in a solution containing the test compound.

5. The method of claim 1, wherein the test compound is introduced into a wild-type nematode and the observation of dpy or embryonic lethal phenotype indicates nematode prolyl 4-hydroxylase inhibition.

6. The method of claim 1, wherein the test compound is introduced into a P4H-gene modified nematode

and the observation of a dpy or embryonic lethal phenotype indicates P4H inhibition.

7. The method of claim 1, wherein the introduction of a test compound is into a test chimeric nematode and the observation of dpy or embryonic lethal phenotype indicates non-native prolyl 4-hydroxylase inhibition.

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B3 8. (Amended) The method of claim 1, wherein the test chimeric nematode is a *C. elegans* and harbors a dpy-18 mutation.

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9. The method of claim 1, wherein the observation of a dpy phenotype indicates that the test compound modulates the P4H gene found on chromosome III.

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B4 12. (Amended) A method for evaluating a test compound's ability to modulate prolyl 4-hydroxylase, comprising the step of:

(a) introducing a test compound into a *Caenorhabditis elegans* comprising a dpy-18 or phy-1 mutation phenotype, and

(b) observing the effect of the test compound on the prolyl-4-hydroxylase activity of the progeny of the *Caenorhabditis elegans*, wherein the rescue of the

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dpy-18 or phy-1 phenotype indicates an increased level of  
prolyl-4-hydroxylase activity.

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15. The method of claim 1 wherein the test compound  
is part of a combinatorial chemical library.

16. The method of claim 12 wherein the test  
compound is part of a combinatorial library.

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17. (Amended) A method for evaluating a test  
compound's ability to modulate P4H, comprising the steps  
of:

(a) introducing a test compound into a test  
chimeric *Caenorhabditis elegans*, a P4H-gene modified  
*Caenorhabditis elegans*, or a wild-type *Caenorhabditis*  
*elegans*, wherein the test chimeric *Caenorhabditis elegans*  
has a complemented P4H gene mutation, and

(b) measuring the level of P4H activity of the  
progeny of the test *Caenorhabditis elegans*, P4H gene  
modified *Caenorhabditis elegans* or wild-type  
*Caenorhabditis elegans*, wherein a lower P4H activity  
compared to untested control *Caenorhabditis elegans*  
indicates that the test compound is an inhibitor of P4H.

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